SEQUENCE LISTING

GENERAL INFORMATION:

APPLICANT:

JOHNSON, L.

(ix) TITLE OF INVENTION:

Human Murine Chimeric Antibodies Against

Respiratory Syncytical Virus

(iii) \ NUMBER OF SEQUENCES: 49

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: CARELLA, BYRNE, BAIN, GILFILLAN, CECCHI, STEWART &

OLSTEIN

(B) STREET: 6 BECKER FARM ROAD

(C) CITY: ROSELAND

(D) STATE: NEW JERSEY

(E) COUNTRY: USA

(F) ZIP: \07068

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYRE: 3.5 INCH DISKETTE

(B) COMPUTER: \ IBM PS/2

(C) OPERATING SYSTEM: MS-DOS

(D) SOFTWARE: Word Perfect 5.1

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: 08/290,592

(B) FILING DATE: Auguat 15, 1994

(C) CLASSIFICATION: 424

(vii) PRIOR APPLICATION DATA

(A) APPLICATION NUMBER:  $\lambda 7/813,372$ 

(B) FILING DATE: December 23, 1991

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Olstein, Elliot M.

(B) REGISTRATION NUMBER: 24,025

(C) REFERENCE/DOCKET NUMBER: 469201-257

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: 201-994-1700

(B) TELEFAX: 201-994-1744

(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH: 27 BASE PAIRS

(B) TYPE: NUCLEIC ACID

(C) STRANDEDNESS: SINGLE

(D) TOPOLOGY: LINEAR

(ii) MOLECULE TYPE: Oligonucleotide

1

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(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:1:	
AGCGGATC	CA GGGGCCAGTG GATAGAC	27
(2) IN	FORMATION FOR SEQ ID NO:2:	
(i) SI	EQUENCE CHARACTERISTICS	
	(A) LENGTH: 17 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:2:	
TGGATGGT	GG GAAGATG	17
(2) INI	FORMATION FOR SEQ ID NO:3:	
(i)	SEQUENCE CHARACTERISTICS	
(1)	(A) LENGTH: 15 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:3:	
GGCCAGTG		15
(2) INF	FORMATION FOR SEQ ID NO:4:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 16 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:4:	
TACAGTTGO	GT GCAGCA	16
	FORMATION FOR SEQ ID NO:5:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 24 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	•
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:5:	
GATGGATCO	CA GTTGGTGCAG CATC	24

(2) INFO	DRMATION FOR SEQ ID NO:6:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 30 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:6:	
CACGTCGACA	A TTCAGCTGAC CCAGTCTCCA	30
	RMATION FOR SEQ ID NO:7:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 30 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:7:	
CGGAATTCAG	GTNNANCTGC AGNAGTCWGG	30
	RMATION FOR SEQ ID NO:8:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 28 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:8:	
CCCAAGCTTG	GTCCCCCTC CGAACGTG	28
(0)	DWITTON TOD OTO TO 100 O	
	RMATION FOR SEQ ID NO:9:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 39 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
(2.25	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:9:	
GGCGTCGACT	CACCATGGAC ATGAGGGTCC YCGCTCAGC	39
(2) TNEO	DMATION FOR SEC ID NO.10.	
	RMATION FOR SEQ ID NO:10:	
(i)	SEQUENCE CHARACTERISTICS	

	(A) LENGTH: 57 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:10:	
GTCACCATCA	A CTTGCAAGTG CCAGCTGAGT GTAGGTTACA TGCACTGGTA CCAGCAG	57
(2) INFO	ORMATION FOR SEQ ID NO:11:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 54 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:11:	
GCAACTTATI	F ACTGCTTTCA GGGGAGTGGG TACCCATTCA CGTTCGGAGG GGGG	54
(2) INFO	DRMATION FOR SEQ ID NO:12:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 32 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:12:	
GTGACCAACA	A TGGACCCTGC TGATACTGCC AC	32
	ORMATION FOR SEQ ID NO:13:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 29 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:13:	
CCATGTTGGT	CACTTTAAGG ACCACCTGG	29
	DRMATION FOR SEQ ID NO:14:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 37 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	

	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:14:	
CCAGTTTACT	F AGTGTCATAG ATCAGGAGCT TAGGGGC	37
	DRMATION FOR SEQ ID NO:15:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 37 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:15:	
TGACACTAGT	T AAACTGGCTT CTGGGGTCCC ATCAAGG	37
(2) INFO	DRMATION FOR SEQ ID NO:16:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 97 AMINO ACIDS	
	(B) TYPE: AMINO ACID	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: PROTEIN	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:16:	
Gln Val Gl	n Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly	
	5 10 15	
Ala Ser Va	al Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Asn	
	20 25 30	
Ser Tyr Ty	r Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu	
	35 40 45	
Glu Trp Me	et Gly Ile Ile Asn Pro Ser Gly Gly Ser Thr Ser Tyr	
	50 55 60	
Ala Gln Ly	s Phe Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser	
_	65 70 75	
	,	
Thr Ser Th	ar Val Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp	
<del></del>	80 85 90	
Thr Ala Va	al Tyr Tyr Cys Ala	
V U	,,,,	

	(2)	I	NFORI	ITAN	ON F	OR S	EQ II	ON O	:17:						
		(:	i)	SEQ	UENC	E CH	ARACI	reris	STIC	S					
				(A)	LEN	GTH:	117	7 AM	INO A	ACID	3				
				(B)	TYPI	Ξ: 2	MINA	AC	D						
				(D)	TOP	DLOG?	Ý: I	LINE	AR			-			
		(:	ii)	MOL	ECULI	TY!	PE:	PROT	CEIN						
		(:	xi) S	SEQU	ENCE	DES	CRIP:	rion:	: S	EQ II	ои с	:17:			
(	Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys	Pro	Gly
					5					10					19
7	Ala	Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Phe	Asn	Ile	Lys
					20					25					3 (
1	Asp	Tyr	Tyr	Ile	Tyr	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	${\tt Gly}$	Leu
					35					40					45
(	31u	Trp	Ile	Gly	Trp	Ile	Asp	Pro	Glu	Asn	Gly	Asn	Thr	Val	Phe
					50					55					60
1	Asp	Pro	Lys	Phe	Gln	Gly	Arg	Val	Thr	Met	Thr	Arg	Asp	Thr	Sei
					65					70					75
7	Thr	Ser	Thr	Val	Tyr	Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Ası
					80					85					90
7	Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Tyr	Tyr	Gly	Thr	Ser	Ser	Phe	Ası
					95					100					10
I	Phe	${\tt Trp}$	Gly	Gln	Gly	Thr	Thr	Leu	Thr	Val	Ser	Ser			
					110					115					
	(2)	IÌ	VFORI	ITAN	ON FO	OR SI	EQ II	ON C	:18:						
		( :	Ĺ)	SEQ	JENCI	E CHA	ARACT	reris	STICS	S					
				(A)	LENG	STH:	117	7 AM	INO A	ACIDS	3				
				(B)	TYPI	3: 2	MING	AC:	ΙD						
				(D)	TODO	at.ogs	<i>7</i> . T	TNE	۱D						

(ii) MOLECULE TYPE: PROTEIN

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly

15

Ala	Leu	Val	Lys	Leu 20	Ser	Сув	Lys	Ala	Ser 25	Gly	Phe	Asn	Ile	Lys
Asp	Tyr	Tyr	Ile	Tyr 35	Trp	Val	Lys	Gln	Arg 40	Pro	Glu	Gln	Gly	Leu 45
Glu	Trp	Ile	Gly	Trp 50	Ile	Asp	Pro	Glu	Asn 55	Gly	Asn	Thr	Val	Phe 60
Asp	Pro	Lys	Phe	Gln 65	Gly	Lys	Ala	Ser	Ile 70	Thr	Ser	Asp	Thr	Ser 75
Ser	Asn	Thr	Ala	Tyr 80	Leu	Gln	Leu	Ser	Ser 85	Leu	Thr	Ser	Glu	Asp 90
Thr	Ala	Val	Tyr	Tyr 95	Cys	Ala	Tyr	Tyr	Gly 100	Thr	Ser	Ser	Phe	Asp 105
Phe	Trp	Gly	Gln	Gly 110	Thr	Thr	Leu	Thr	Val 115	Ser	Ser			
(2)	II.	1FORI	/ATIC	ON FO	OR SE	EO II	NO:	:19						
(2)		NFORI	ATIO SEQU					:19 STICS	3					
(2)			SEQU		CHA	RACI	ERIS							
(2)			SEQU	JENCE	E CHA	RACT	ERIS	STICS NO AC						
(2)			SEQU (A) (B)	JENCE LENG	E CHA ETH:	ARACT 95 MINO	ERIS AMIN	STICS NO AC						
(2)	<b>(</b> )		SEQU (A) (B) (D)	JENCE LENG TYPE	E CHA ETH: E: A OLOGY	95 MINO	ERIS AMIN ACI	STICS IO AC ID AR						
(2)	i) i)	i)	SEQU (A) (B) (D)	JENCE LENG TYPE TOPO	E CHA ETH: E: A OLOGY E TYE	ARACT 95 AMINO 7: I PE:	ERIS AMIN ACI INEA	STICS IO AC ID AR TEIN		ONO:	:19:			
	i) i) c)	i) ii) si)	SEQU (A) (B) (D) MOLE	LENCE TYPE TOPO ECULE ENCE	E CHA ETH: E: A DLOGY E TYE DESC	ARACT 95 MINO 7: I PE: CRIPT	AMINO ACI	STICS IO AC ID AR FEIN : SE	CIDS			Ala	Ser	Val 15
Asp	(i (i (z Ile	i) ii) ki) S	SEQU (A) (B) (D) MOLE	JENCE TYPE TOPO ECULE ENCE Thr	E CHA ETH: E: A DLOGY E TYE DESC Gln	95 MMINO Y: I PE: CRIPT	AMIN ACI INEA PROTION:	STICS ID AR TEIN : SE	CIDS  EQ II  Thr  10	Leu	Ser			15
Asp	(i (x Ile Asp	ii) ki) k Gln Arg	SEQUAL (A) (B) (D) MOLE SEQUE	TYPE TOPO ECULE ENCE Thr 5 Thr	E CHA ETH: E: A DLOGY E TYP DESC Gln	ARACT 95 AMINO 7: I PE: CRIPT Ser Thr	ERIS AMIN ACI INE PROT FION: Pro	STICS JO AC ID AR FEIN Ser Arg	EQ II Thr 10 Ala 25	Leu	Ser	Ser	Ile	15 Ser 30
Asp Gly Ser	(i (x) Ile Asp	ii) ci) S Gln Arg Leu	SEQUAL (A) (B) (D) MOLE SEQUE Met Val	TYPE TOPO ECULE ENCE Thr 5 Thr 20 Trp 35	E CHA	ARACT 95 AMINO 7: I PE: CRIPT Ser Thr	AMINO ACI LINEA PROT FION: Pro	STICS JO AC ID AR TEIN SET Arg	EQ II Thr 10 Ala 25 Pro 40	Leu Ser Gly	Ser Gln Lys	Ser Ala	Ile Pro	15 Ser 30 Lys 45

m

65	70	75

Ser Ser Leu Gln Pro Asp Asp Phe Ala Thr Tyr Tyr Cys Gln Gln 80 85 90

Tyr Asn Ser Tyr Ser

95

(2)	INFORMATION	FOR	SEO	TD	NO - 20

- (i) SEQUENCE CHARACTERISTICS
  - (A) LENGTH: 107 AMINO ACIDS
  - (B) TYPE: AMINO ACID
  - (D) TOPOLOGY: LINEAR
- (ii) MOLECULE TYPE: PROTEIN
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Asp Ile Gln Met Thr Gln Ser Pro Ser Thr Leu Ser Ala Ser Val
5 10 15

Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Ile Asn
20 25 30

Arg Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
35 40 45

Leu Leu Ile Tyr Arg Ala Asn Arg Leu Val Asp Gly Val Pro Ser
50 55 60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile
65 70 75

Ser Ser Leu Gln Pro Asp Asp Phe Ala Thr Tyr Tyr Cys Leu Gln 80 85 90

Phe His Glu Phe Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu 95 100 105

Ile Lys

- (2) INFORMATION FOR SEQ ID NO:21
  - (i) SEQUENCE CHARACTERISTICS
    - (A) LENGTH: 107 AMINO ACIDS
    - (B) TYPE: AMINO ACID

(D) TOPOLOGY: LINEAR	
(ii) MOLECULE TYPE: PROTEIN	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:	
Asp Ile Lys Met Thr Gln Ser Pro Ser Ser Met Tyr Val Ser Leu	
5 10 15	
Gly Glu Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Ile Asn	
20 25 30	
Arg Tyr Leu Asn Trp Phe Gln Gln Lys Pro Gly Lys Ser Pro Lys	
35 40 45	
Thr Leu Ile His Arg Ala Asn Arg Leu Val Asp Gly Val Pro Ser	
50 55 60	
Arg Phe Ser Gly Ser Gly Gln Glu Tyr Ser Leu Thr Ile	
65 70 75	
Ser Ser Leu Glu Phe Glu Asp Met Gly Ile Tyr Tyr Cys Leu Gln	
80 85 90	
Phe His Glu Phe Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu	
95 100 105	
Ile Lys	
(2) INFORMATION FOR SEQ ID NO:22:	
(i) SEQUENCE CHARACTERISTICS	
(A) LENGTH: 117 NUCLEOTIDES	
(B) TYPE: NUCLEIC ACID	
(C) STRANDEDNESS: SINGLE	
(D) TOPOLOGY: LINEAR	
(ii) MOLECULE TYPE: Oligonucleotide	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:	
CCATGGACTG GACCTGGAGG GTCTTCTGCT TGCTGGCTGT AGCACCAGGT GCCCACTCCC	60
AGGTGCAGCT GGTGCAGTCT GGAGCTGAGG TGAAGAAGCC TGGAGCCTCA GTGAAGG	117
(2) INFORMATION FOR SEQ ID NO:23:	
(i) SEQUENCE CHARACTERISTICS	
(A) LENGTH: 120 NUCLEOTIDES	
(B) TYPE: NUCLEIC ACID	
(C) STRANDEDNESS: SINGLE	

(i)

(D) TOPOLOGY: LINEAR	
(ii) MOLECULE TYPE: Oligonucleotide	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO	:23:
CACTTCTTCG GACCTCGGAG TCACTTCCAA AGGACGTTCC	GTAGACCTAA GTTGTAATTC 60
CTGATGATGT AAATGACCCA CGCTGTCCGA GGACCTGTTC	CCGAGCTCAC CTACCCAACC 120
(2) INFORMATION FOR SEQ ID NO:24:	
(i) SEQUENCE CHARACTERISTICS	
(A) LENGTH: 119 NUCLEOTIDES	
(B) TYPE: NUCLEIC ACID	
(C) STRANDEDNESS: SINGLE	
(D) TOPOLOGY: LINEAR	
(ii) MOLECULE TYPE: Oligonucleotide	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO	:24:
GGGCTCGAGT GGATGGGTTG GATTGACCCT GAGAATGGTA	ATACTGTGTT TGACCGAAGT 60
TCCAGGGCAG AGTCACCATG ACCAGGGACA CGTCCACGAG	CACAGTCTAC ATGGAGCTG 119
(2) INFORMATION FOR SEQ ID NO:25:	•
(i) SEQUENCE CHARACTERISTICS	
(A) LENGTH: 137 NUCLEOTIDES	
(B) TYPE: NUCLEIC ACID	
(C) STRANDEDNESS: SINGLE	
(D) TOPOLOGY: LINEAR	
(ii) MOLECULE TYPE: Oligonucleotide	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO	:25:
GGTGCTCGTG TCAGATGTAC CTCGACTCGT CGGACTCTAG	ACTCCTGTGC CGGCACATAA 60
TGACACGCAT GATGCCATGT TCGAGGAAAC TGAAGACCCC	GGTTCCGTGG TGAGAGTGTC 120
ACTCGAGTAT TCCTAGG	137
(2) INFORMATION FOR SEQ ID NO:26:	
(i) SEQUENCE CHARACTERISTICS	
(A) LENGTH: 106 NUCLEOTIDES	
(B) TYPE: NUCLEIC ACID	
(C) STRANDEDNESS: SINGLE	
(D) TOPOLOGY: LINEAR	
(ii) MOLECULE TYPE: Oligonucleotide	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO	:26:
CCATGGACAT GAGGGTCCCC GCTCAGCTCC TGGGGCTCCT	GCTGCTCTGG CTCCCAGGTG 60
CCAAATGTGA TATCCAGATG ACCCAGTCTC CTTCCACCCT	GTCTGC 106
(2) INFORMATION FOR SEC ID NO.27.	

SEQUENCE CHARACTERISTICS

(A) LENGTH: 107 NUCLEOTIDES	
(B) TYPE: NUCLEIC ACID	
(C) STRANDEDNESS: SINGLE	
(D) TOPOLOGY: LINEAR	
(ii) MOLECULE TYPE: Oligonucleotide	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:	
GTCAGAGGAA GGTGGGACAG ACGTAGACAT CCTCTGTCTC AGTGGTAGTG AACGTTCCGC	60
TCAGTCCTGT AATTATCCAT AAATTTGACC ATGGTCGTCT TTGGGCC	107
(a) THEODMARIAN FOR GEO. ID NO. 00	
(2) INFORMATION FOR SEQ ID NO:28:	
(i) SEQUENCE CHARACTERISTICS	
(A) LENGTH: 107 NUCLEOTIDES	
(B) TYPE: NUCLEIC ACID	
(C) STRANDEDNESS: SINGLE	
(D) TOPOLOGY: LINEAR	
(ii) MOLECULE TYPE: Oligonucleotide	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:	
GAAAGCCCCT AAGCTCCTGA TCTATCGTGC AAACAGATTG GTAGATGGGG TCCCATCAAG	60
GTTCAGCGGC AGTGGATCTG GGACAGAATT CACTCTCACC ATCAGCA	107
(2) INFORMATION FOR SEQ ID NO:29:	
(i) SEQUENCE CHARACTERISTICS	
(A) LENGTH: 116 NUCLEOTIDES	
(B) TYPE: NUCLEIC ACID	
(C) STRANDEDNESS: SINGLE	
(D) TOPOLOGY: LINEAR	
(ii) MOLECULE TYPE: Oligonucleotide	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:	
GTCTTAAGTG AGAGTGGTAG TCGTCGGACG TCGGACTACT AAAACGTTGA ATAATGACGG	60
ATGTCAAAGT ACTCAAAGGC ATGTGCAAGC CTCCCCCCTG GTTCGAACTT TATTTT	116
(2) INFORMATION FOR SEQ ID NO:30:	
(i) SEQUENCE CHARACTERISTICS	
(A) LENGTH: 123 AMINO ACIDS	
(B) TYPE: AMINO ACID	
(D) TOPOLOGY: LINEAR	
(ii) MOLECULE TYPE: PROTEIN	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:	
Gln Val Thr Leu Arg Glu Ser Gly Pro Ala Leu Val Lys Pro Thr 5 10 15	
5 10 15	

Gln Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser

	20	)				25					30
Ser Ser Gly	Met Cys		Gly	Trp	Ile	Arg 40	Gln	Pro	Pro	Gly	Lys 45
Ala Leu Glu	Trp Leu		Asp	Ile	Glu	Trp 55	Asp	Asp	Asp	Lys	Asp 60
Tyr Asn Thr	Ser Leu 65		Thr	Arg	Leu	Thr 70	Ile	Ser	Lys	Asp	Thr 75
Ser Lys Asn	Gln Val		Leu	Thr	Val	Thr 85	Asn	Met	Asp	Pro	Ala 90
Asp Thr Ala	Thr Tyr		Сув	Ala	Arg	Ile 100	Thr	Val	Ile	Pro	Ala 105
Pro Ala Gly	Tyr Met	_	Val	Trp	Gly	Arg 115	Gly	Thr	Pro	Val	Thr 120
Val Ser Ser											
(2) INFOR	MATION F SEQUENC (A) LEN (B) TYF (D) TOF	E CHA GTH: E: A	ARAC'I 120 MINO	TERIS	TICS NO A		S				
(ii)	MOLECUL SEQUENCE			PROT			NO.	. 21 .			
Gln Val Thr									Lys	Pro	Thr 15
Gln Thr Leu	Thr Leu 20		Суз	Thr	Phe	Ser 25	Gly	Phe	Ser	Leu	Ser 30
Thr Ser Gly			C1	Trn	Tla	7	Gl n	Pro	Ser	G] v	Larg
	Met Ser		GIY	111	116	40	GIII			GIY	цу <b>Б</b> 45
Ala Leu Glu	35	Ala				40					45

Se	er	Lys	Asn	Gln	Val 80	Val	Leu	Lys	Val	Thr 85	Asn	Met	Asp	Pro	Ala 90
A	sp	Thr	Ala	Thr	Tyr 95	Tyr	Cys	Ala	Arg	Ser 100	Met	Ile	Thr	Asn	Trp
Ty	γr	Phe	Asp	Val	Trp 110	Gly	Ala	Gly	Thr	Thr 115	Val	Thr	Val	Ser	Ser 120
. (:	2)	(:	NFORM i) ii)	SEQUAL (A) (B) (D)	JENCI LENC	E CHA ETH: E: A OLOGY	ARACT 120 AMINO Y: I		STICS INO A ID AR		3				
G]	ln	-	xi) S Glu							EQ II Gly 10			Gln	Pro	Ser
G]	ln	Thr	Leu	Ser		Thr	Сув	Ser	Phe	Ser 25	Gly	Phe	Ser	Leu	Ser 30
Tł	ır	Ser	Gly	Met	Ser 35	Val	Gly	Trp	Ile	Arg 40	Gln	Pro	Ser	Gly	Glu 45
G]	Lу	Leu	Glu	Trp	Leu 50	Ala	Asp	Ile	Trp	Trp 55	Asp	Asp	Lys	Lys	Asp 60
Т	r	Asn	Pro	Ser	Leu 65	Lys	Ser	Arg	Leu	Thr 70	Ile	Ser	Lys	Asp	Thr 75
Se	er	Ser	Asn	Gln	Val 80	Phe	Leu	Lys	Ile	Thr 85	Gly	Val	Asp	Thr	Ala 90
As	gp	Thr	Ala	Thr	Tyr 95	Tyr	Cys	Ala	Arg	Ser 100	Met	Ile	Thr	Asn	Trp 105
T	r	Phe	Asp	Val	Trp 110	Gly	Ala	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser

(2)	IN	FORM	/IATI	ON FO	OR SI	EQ II	ои с	:33:						
	(i)	)	SEQU	JENCI	E CHA	ARAC'	reris	STICS	3					
			(A)	LENC	TH:	95	AMI	OA OF	CIDS					
			(B)	TYPE	E: 2	MINA	AC:	[D						
			(D)	TOPO	LOGY	Y: I	LINE	AR						
	(i:	i)	MOLE	CULI	TYI	PE:	PRO!	CEIN						
	(x:	i) S	EQUE	ENCE	DES	CRIP:	CION	: SI	EQ II	ON C	:33:			
Asp	Ile	3ln	Met	Thr	Gln	Ser	Pro	Ser	Thr	Leu	Ser	Ala	Ser	Val
-				5					10					15
Glv	Asp A	Ara	Val	Thr	Ile	Thr	Cvs	Arq	Ala	Ser	Gln	Ser	Ile	Ser
1		-		20			-	J	25					30
Ser	Trp I	Leu	Ala	Trp	Tvr	Gln	Gln	Lvs	Pro	Glv	Lvs	Ala	Pro	Lys
501				35	-1-			-1-	40	1	2			45
				33										
T. <b>211</b>	Leu I	r1_e	Туг	Δsn	Δla	Ser	Ser	Leu	Glu	Ser	Glv	Val	Pro	Ser
ЦСС	Dea .		- 1 -	50		-	001		55		7			60
				50					33					
λrα	Phe S	or	Glv	Sar	Cl v	Sor	Gl v	Thr	Glu	Dhe	Thr	T.e.u	Thr	Tle
Arg	FIIC L	)CI	Gry		Gry	Ser	GLY	1111	70	THE	1111	БСС		75
				65					70					,,
Com	Ser I		C1 5	Dwo	7 an	7 000	Dho	ח ה	Thr	Тиг	Тъгъ	Cva	Gl n	Gln
ser	ser i	Jeu	GIII		дан	Asp	FIIE	Ата		ıyı	ıyı	СуБ	GIII	90
				80					85					30
	<b>.</b>		<b></b>	<b>G</b>										
Tyr	Asn S	er	Tyr											
				95										
								2.4						
(2)				ON FO										
	(i)	1	-	JENCE						_				
				LENG				INO F	ACIDS	3				
				TYPE		MINC	) AC	ΙD						
				TOPO			LINE	<b>L</b> R						
	(i:	L)	MOLE	ECULE	TYI	?E:	PRO	rein						
	(x:	i) s	SEQUE	ENCE	DESC	CRIPT	CION	: SI	EQ II	ONO	:34:			
Asp	Ile (	3ln	Met	Thr	Gln	Ser	Pro	Ser	Thr	Leu	Ser	Ala	Ser	Val
				5					10					15
Gly	Asp A	Arg	Val	Thr	Ile	Thr	Cys	Lys	Cys	Gln	Leu	Ser	Val	Gly
				20					25					30
Tyr	Met I	lis	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Leu

Trp	Ile	Tyr	Asp	Thr 50	Ser	Lys	Leu	Ala	Ser 55	Gly	Val	Pro	Ser	Arg 60
Phe	Ser	Gly	Ser	Gly 65	Ser	Gly	Thr	Glu	Phe 70	Thr	Leu	Thr	Ile	Ser 75
Ser	Leu	Gln	Pro	Asp 80	Asp	Phe	Ala	Thr	Tyr 85	Tyr	Cys	Phe	Gln	Gly 90
Ser Lys	Gly	Tyr	Pro	Phe 95	Thr	Phe	Gly	Gly	Gly 100	Thr	Lys	Leu	Glu	Ile 105
цув														
(2)	II	NFORI	ITAN	ON FO	OR SI	EQ II	ONO:	:35:						
	(:	i)	SEQU	JENCI	E CHA	ARACT	CERIS	STICS	3					
			(A)	LENG	TH:	106	AMI	NO P	ACIDS	3				
			(B)	TYPE	E: #	MINC	ACI	D						
			(D)	TOPO	OLOGY	?: I	INE	AR.						
	(:	ii)	MOLE	ECULI	TYP	E:	PROT	EIN						
	(:	xi) S	SEQUI	ENCE	DESC	CRIPT	CION:	: SE	EQ II	ONO:	35:			
Asp	Ile	Gln	Leu	Thr	${\tt Gln}$	Ser	Pro	Ala	Ile	Met	Ser	Ala	Ser	Pro
				5					10					15
Gly	Glu	Lys	Val	Thr	Met	Thr	Сув	Ser	Ala	Ser	Ser	Ser	Val	Gly
				20					25					30
Tyr	Met	His	Trp	Tyr	Gln	Gln	Lys	Ser	Ser	Thr	Ser	Pro	Lys	Leu
				35					40					45
			_									_		_
Trp	Ile	Tyr	Asp		Ser	Lys				_	Val	Pro	GIY	Arg
				50					55					60
Dla a	<b>0</b>	<b>a</b> 1	0	G1	0	<b>0</b> 1	3	0	m	C	T	mb	<b>T</b> 1.0	C
Pne	ser	GIY	ser		ser	GIY	ASI	ser		ser	Leu	1111	тте	Ser
				65					70					75
Sar	Tla	Gln	<b>Δ</b> 1 =	Gl 11	7 en	Wal	λla	Thr	Туг	Туг	Cva	Dhe	Gln	Glv
DET	116	U111	пта	80	nap	Val	ATG	T-11T	85	-1-	CyB	1110	J.11	90
				30					ŲJ					<i>J</i> 0
Ser	Glv	Tyr	Pro	Phe	Thr	Phe	Glv	Glv	Glv	Thr	Lvs	Len	G] 11	Tle
501	<b>-</b> 1	-1-		95		1110	J-1	~- <i>1</i>	100		-,-			105

Lys
(2) INFORMATION FOR SEQ ID NO:36:
(i) SEQUENCE CHARACTERISTICS
(A) LENGTH: 63 NUCLEOTIDES
(B) TYPE: NUCLEIC ACID
(C) STRANDEDNESS: SINGLE
(D) TOPOLOGY: LINEAR
(ii) MOLECULE TYPE: Oligonucleotide
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:
GCCTGAGCTC ACGGTGACCG TGGTCCCGCC GCCCCAGACA TCGAAGTAGC AGTTCGTGAT CAT  63
0001010010 11000101000 100100000 00000101101
(2) INFORMATION FOR SEQ ID NO:37:
(i) SEQUENCE CHARACTERISTICS
(A) LENGTH: 79 NUCLEOTIDES
(B) TYPE: NUCLEIC ACID
(C) STRANDEDNESS: SINGLE
(D) TOPOLOGY: LINEAR
(ii) MOLECULE TYPE: Oligonucleotide
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:
GTTGGTGACT TTAAGGACCA CCTGGTTTTT GGAGGTATCC TTGGAGATTG TGAGCCGGCT 60
CTTCAGCCAT GGATTATAG 79
(2) INFORMATION FOR SEQ ID NO:38:
(i) SEQUENCE CHARACTERISTICS
(A) LENGTH: 89 NUCLEOTIDES
(B) TYPE: NUCLEIC ACID
(C) STRANDEDNESS: SINGLE
(D) TOPOLOGY: LINEAR
(ii) MOLECULE TYPE: Oligonucleotide
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:
GCGCCTTCCC TGGGGGCTGA CGAATCCAGC CTACACTCAT ACCAGAAGTG CTCAGTGAAA 60
ACCCAGAGAA GGTGGAGGTC AGTGTGAGG 89
(a) TYPOPMYTON FOR GPO TR NO 20
(2) INFORMATION FOR SEQ ID NO:39:

- (i) SEQUENCE CHARACTERISTICS
  - (A) LENGTH: 70 NUCLEOTIDES
  - (B) TYPE: NUCLEIC ACID
  - (C) STRANDEDNESS: SINGLE
  - (D) TOPOLOGY: LINEAR
- (ii) MOLECULE TYPE: Oligonucleotide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

CCAGGTCA( GACCTGCA(	CC TTAAGGGAGT CTGGTCCTGC GCTGGTGAAA CCCACACAGA CCCTCACACT	60 70
		, 0
(2) IN	FORMATION FOR SEQ ID NO:40:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 78 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:40:	
CAGCCCCC	AG GGAAGGCCCT GGAGTCGCTT GCAGACATTT GGTGGGATGA CAAAAAGGAC	60
TATAATCC	AT CCCTGAAG	78
• •	FORMATION FOR SEQ ID NO:41:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 64 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:41:	
GGTCCTTAA	AA GTGACCAACA TGGACCCTGC TGATACTGCC ACTTACTACT GTGCTCGGTC	60
TATG		64
(2) INF	FORMATION FOR SEQ ID NO:42:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 72 NUCLEOTIDES	
	(B) TYPE: NUCLEIC ACID	
	(C) STRANDEDNESS: SINGLE	
	(D) TOPOLOGY: LINEAR	
(ii)	MOLECULE TYPE: Oligonucleotide	
(xi)	SEQUENCE DESCRIPTION: SEQ ID NO:42:	
GGCGTCGAC	CT CACCATGGAC TGGACCTGGA GGGTCTTCTG CTTGCTGGCT GTAGCACCAG	60
GTGCCCACT	cc cc	72
(2) INE	FORMATION FOR SEQ ID NO:43:	
(i)	SEQUENCE CHARACTERISTICS	
	(A) LENGTH: 7 AMINO ACIDS	
	(B) TYPE: AMINO ACID	
	(D) TOPOLOGY: LINEAR	

- (ii) MOLECULE TYPE: PROTEIN
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

Thr Ser Gly Met Ser Val Gly

5

- (2) INFORMATION FOR SEQ ID NO:44:
  - (i) SEQUENCE CHARACTERISTICS
    - (A) LENGTH: 16 AMINO ACIDS
    - (B) TYPE: AMINO ACID
    - (D) TOPOLOGY: LINEAR
  - (ii) MOLECULE TYPE: PROTEIN
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

Asp Ile Trp Trp Asp Asp Lys Lys Asp Tyr Asn Pro Ser Leu Lys Ser

5 10

15

- (2) INFORMATION FOR SEQ ID NO:45:
  - (i) SEQUENCE CHARACTERISTICS
    - (A) LENGTH: 10 AMINO ACIDS
    - (B) TYPE: AMINO ACID
    - (D) TOPOLOGY: LINEAR
  - (ii) MOLECULE TYPE: PROTEIN
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

Ser Met Ile Thr Asn Trp Tyr Phe Asp Val

5 10

- (2) INFORMATION FOR SEQ ID NO:46:
  - (i) SEQUENCE CHARACTERISTICS
    - (A) LENGTH: 10 AMINO ACIDS
    - (B) TYPE: AMINO ACID
    - (D) TOPOLOGY: LINEAR
  - (ii) MOLECULE TYPE: PROTEIN
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Lys Cys Gln Leu Ser Val Gly Tyr Met His

- (2) INFORMATION FOR SEQ ID NO:47:
  - (i) SEQUENCE CHARACTERISTICS
    - (A) LENGTH: 6 AMINO ACIDS
    - (B) TYPE: AMINO ACID
    - (D) TOPOLOGY: LINEAR
  - (ii) MOLECULE TYPE: PROTEIN
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

Thr Ser Lys Leu Ala Ser

5

- (2) INFORMATION FOR SEQ ID NO:48:
  - (i) SEQUENCE CHARACTERISTICS
    - (A) LENGTH: 8 AMINO ACIDS
    - (B) TYPE: AMINO ACID
    - (D) TOPOLOGY: LINEAR
  - (ii) MOLECULE TYPE: PROTEIN
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Phe Gln Gly Ser Gly Tyr Pro Phe

**E** 

- (2) INFORMATION FOR SEQ ID NO:49:
  - (i) SEQUENCE CHARACTERISTICS
    - (A) LENGTH: 6 AMINO ACIDS
    - (B) TYPE: AMINO ACID
    - (D) TOPOLOGY: LINEAR
  - (ii) MOLECULE TYPE: PROTEIN
  - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

Ser Val Gly Tyr Met His